Henri Aïdasso

Research Scientist in Machine Learning and Software Engineering
Ph.D. Researcher @ École de technologie supérieure (ÉTS)
Montréal, Quebec, Canada

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Languages

English: Professional working proficiency | **French:** Native Language | **Fon:** Native Language

Research Interests

Machine Learning, Deep Learning, Natural Language Processing, Software Engineering, Intelligent Systems, Distributed Systems, Software Architecture, Digital Twins.

Education

Ph.D. in Engineering (Applied Research Profile) — 2022 — Jan 2026 (*exp.*)
Dept. of Software and IT Engineering, École de technologie supérieure (ÉTS) — Montreal, Canada
GPA: 4.3/4.3

M.Sc. in Big Data: Decision Support and Machine Learning — 2020 — 2022
Faculty of Computer Sc. and Electronics, University of Rennes 1 — Rennes, France
Grade: Valedictorian, "*Mention Très Bien*"

B.Sc. in Computer Science — 2019 — 2020
Faculty of Computer Sc. and Electronics, University of Rennes 1 — Rennes, France
Grade: Valedictorian, "*Mention Très Bien*"

B.Sc. in Computer Science and Management — 2014 — 2017
Dept. of Computer Sc. and Management, University of Abomey-Calavi (UAC) — Cotonou, Benin
Grade: Valedictorian, "*Mention Bien*"

Experiences

Research and Development Scientist — Aug 2025 — Dec 2025 (4 mos.)
Computer Research Institute of Montreal (CRIM) • Internship — Montreal, Canada

Developed optimized algorithms for integrating terabytes of geospatial datacubes in the Spatio-Temporal Asset Catalog (STAC) for climate research. Exploring geospatial data standardization and Machine Learning (ML) modeling as part of the GeoConnections project by *Natural Resources Canada*.

Research Scientist — May 2023 — Aug 2025 (2 yrs 4 mos.)
TELUS • Mitacs Fellowship — Montreal, Canada

Conducted applied research on efficient AI-based solutions to mitigate intermittent job failures, achieving up to 25% reduction in machine costs and improving developer productivity. Designed an intelligent framework integrating ML models and AI agents for anomaly detection, diagnosis, and automated repair.

Data Scientist — Sep 2021 — Aug 2022 (1 yrs.)
Energiency • Apprenticeship — Rennes, France

Improved the energy efficiency of large European Industry 4.0 factories by up to 15% (in electricity and gas bill reduction) using data science and digital twins approaches: real-time energy consumption modeling and forecasting, anomaly detection, golden batch analysis, and performance deviation analysis.

Machine Learning Engineer

Sep 2020 — Aug 2022 (2 yrs.)

Energiency • Apprenticeship

Rennes, France

Developed and maintained the cloud-based backend for AI model deployments at scale, enabling distributed model training and real-time inference workflows for dozens of ML models actively serving end customers. Created several in-house data science libraries to facilitate the reuse of data science tools.

Information Technology Developer

May 2020 — Aug 2020 (4 mos.)

Worldline Global • Internship

Rennes, France

Developed financial data monitoring tools for *Tap2Use* (the top 1 digital payment solution for transportation in France) including daily statistics on large data volumes across distributed NoSQL databases.

Software Engineer

Nov 2018 — Oct 2020 (2 yrs.)

Arriauz Services Santé • Contract

Cotonou, Benin

Developed and maintained the platform of the health services mobile application *Dis-moi Doc*: instant chat with a doctor, drug prices, medication reminders – with 15,000+ downloads on Google Play Store.

Software Developer

Sep 2016 — Aug 2019 (3 yrs.)

Contracts and Internships

Cotonou, Benin

Android and full-stack web developer (consultant/intern) on various projects in healthcare, finance, education, and business management across seven governmental and software organizations: Port Authority of Cotonou, Beninese Electrical Energy Company, RINTIO, JMA Plus, OpenSI, and Blolab.

TEACHING AND SUPERVISION EXPERIENCES

Lecturer

Sum 2025

École de technologie supérieure (ÉTS) · Contract

Montreal, Canada

LOG680 — Introduction to DevOps (AI-powered Automation and Software Analytics)

Teaching Assistant — LOG680

Fall 23, Win 24, Sum 24, Win 25

École de technologie supérieure (ÉTS) · Contract

Montreal, Canada

Graduate Research Supervisor

Sum 2025

École de technologie supérieure (ÉTS)

Montreal, Canada

Supervised an M.Eng. internship project on developing an AI agent to assist in fixing flaky job failures. Co-supervised an M.Sc. research project on the dynamic modeling of DevOps processes using BPMN.

PUBLICATIONS

Towards Open-Ended Discovery for Low-Resource NLP
Bonaventure F. P. Dossou*, Henri Aïdasso* (*Equal Contribution)
Proceedings of the UncertaiNLP Workshop at the 30th Conference on Empirical Methods in Natural Language Processing (EMNLP). September 2025, in press (pages to appear).

Efficient Detection of Intermittent Job Failures Using Few-Shot Learning
Henri Aïdasso, Francis Bordeleau, Ali Tizghadam
Proceedings of the IEEE 41st International Conference on Software Maintenance and Evolution (ICSME). September 2025, in press (pages to appear).

Build Optimization: A Systematic Literature Review
Henri Aïdasso, Mohammed Sayagh, Francis Bordeleau
ACM Computing Surveys (CSUR). August 2025, Vol. 58, No. 1, pp. 1-38.

Towards Build Optimization Using Digital Twins
Henri Aïdasso, Francis Bordeleau, Ali Tizghadam
Proceedings of the ACM 21st International Conference on Predictive Models and Data Analytics in Software Engineering (PROMISE). June 2025, pp. 95-98.

On the Diagnosis of Flaky Job Failures: Understanding and Prioritizing Failure Categories
Henri Aïdasso, Francis Bordeleau, Ali Tizghadam
Proceedings of the IEEE/ACM 47th International Conference on Software Engineering: Software Engineering in Practice (ICSE SEIP). May 2025, pp. 192-202.

On the Illusion of Success: An Empirical Study of Build Reruns and Silent Failures in Industrial CI
Henri Aïdasso, Francis Bordeleau, Ali Tizghadam
IEEE Transactions on Software Engineering (TSE). Submitted September 2025 (under review).

Do SDN Configuration Changes Get Reviewed Differently? An Empirical Study at TELUS
Samah Kansab, Henri Aïdasso, Francis Bordeleau, Ali Tizghadam
Empirical Software Engineering (EMSE). Submitted July 2025 (under review).

SKILLS

Research (3 years). **Machine Learning** (6 years). **Programming:** Python (7 yrs), Java (9 yrs), R (2 yrs), PHP (5+ yrs), Node.js (4 yrs), Javascript (5+ yrs), C++ (1 yr), Bash (2 yrs). **Software Engineering and Architecture** (9 yrs). **Databases** (8 yrs). **DevOps:** CI/CD (7 yrs), Docker (7 yrs), k8s (3 yrs). **Mathematics.**

Frameworks: scikit-learn, PyTorch, Transformers, smolagents, FastAPI, SpringBoot, NestJS, Plotly
Database Systems: PostgreSQL, TimescaleDB, MongoDB. **Tools:** Docker, Kubernetes, Postman, Clouds.

HONORS AND AWARDS

Arbour Foundation Doctoral Scholarship   2025
Prestigious and highly selective scholarship awarded by the *Arbour Foundation* to outstanding doctoral students in Quebec universities for academic excellence, leadership, and dedication to social impact.

Mitacs Accelerate Fellowship   2023 — 2025
Awarded by *Mitacs* in partnership with *TELUS* for doctoral research collaborations between academia and industry via paid research internships.

Top of Class — Awarded the Only Highest Honors   2022
Graduated valedictorian of the MSc Class of 2022 with the only "*Mention Très Bien*", the highest academic distinction in the French grading system for achieving an overall grade average above 16/20.

Trophy of Excellency   2017
Awarded by the *Club des Elites of UAC* to the best student in Computer Science applied to Management for outstanding academic performance, after being listed on the Honor Roll as Top (1st) of Class all years of the B.Sc. degree in 2015, 2016, and 2017.

National Mathematics Champion   2014
One of the top four champions in Benin's national mathematics championship, having represented the country at the 2014 International Mathematical Olympiad (IMO) held in Cape Town, South Africa.

Benin Government Excellence Scholarship   2014 — 2017
Excellence scholarship awarded to top-performing students in the national college-leaving exam, renewed for the three consecutive years of undergraduate study for continued academic performance.

Coordinator of graduate studies committees at the ÉTS Students' Association (AÉÉTS)	2025 — Now
Head of Organizing Committee — Annual Congress of ÉTS Student Researchers (CAéc)	2025 — Now
Committee Member — Doctoral Excellence Awards Evaluation Committee at ÉTS	Fall 2025
Committee Member — International Graduate Student Welcome Committee at ÉTS	Fall 2025
Mentor for intl. undergraduate students in the Contact Program at ÉTS	Sum — Fall 2025
ACL Member — Association of Computational Linguistics	2025 — Now
Junior Program Committee Member for the ACM/IEEE MSR 2026, Technical Track	2025
Program Committee Member for the IEEE CASCON 2025, Artifacts Track	2025
Reviewer for the UncertaiNLP workshop @EMNLP 2025	2025
Reviewer for the African Computer Vision Summer School (ACVSS)	2024 — 2025
Junior Reviewer for the ACM/IEEE MODELS 2024, Technical Track	2024
IEEE Member — Institute of Electrical and Electronics Engineers	2024 — Now
Member of Cédille — Scientific club for DevOps experimentation at ÉTS	2023 — Now
Member of SEMTL — Software Engineering Researchers' Community at Montréal	2022 — Now
Vice President of the Student Office in MIAGE at University of Rennes 1 (France)	2020 — 2021
Secretary-General of the Association of Computer Science Students at UAC (Benin)	2017 — 2018
Information Technology Educator for the EduGh project at AIESEC in Legon (Ghana)	Sum 2015